Statistical Series 2001-28

EUB

# Alberta Electric Industry

## Annual Statistics for 2001

Alberta Energy and Utilities Board

Statistical Series 2001-28

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**ALBERTA ENERGY AND UTILITIES BOARD**
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## Table 1. ALBERTA ELECTRIC ENERGY CAPACITY AND GENERATION BY RESOURCE, 2001

| Year / Resource Type | Coal | Natural Gas | Hydro | Wind | Biomass & Waste | Others* | Total |
|---|---|---|---|---|---|---|---|
| Capacity (MW) | 5615.0 | 4015.9 | 864.6 | 99.6 | 30.5 | 24.5 | 10650.1 |
| Capacity (%) | 52.72% | 37.71% | 8.12% | 0.94% | 0.29% | 0.23% | 100% |
| Generation (GWh) | 41713.3 | 18792.9 | 1453.3 | 183.1 | 255.2 | 82.0 | 62479.8 |
| Generation (%) | 66.76% | 30.08% | 2.33% | 0.29% | 0.41% | 0.13% | 100% |
| Capacity Factor (%) | 84.80% | 53.42% | 19.19% | 20.99% | 95.52% | 38.21% | 66.97% |

* "Others" includes oil, diesel, geothermal, and solar.

## Table 2. ALBERTA ELECTRIC ENERGY NET INSTALLED CAPACITY (MCR MW) BY RESOURCE, 2001 [1]

| Resource Type | Coal | Natural Gas | Hydro | Wind | Biomass & Waste | Others* | Total |
|---|---|---|---|---|---|---|---|
| **Total** | 5615.0 | 4015.9 | 864.6 | 99.6 | 30.5 | 24.5 | 10650.1 |

1 Only plants that have reported to the EUB are included.

* "Others" includes oil, diesel, geothermal, and solar.

## Table 3. ALBERTA ELECTRIC ENERGY GENERATION (GWh) BY RESOURCE, 2001 [1]

| Resource Type | Coal | Natural Gas | Hydro | Wind | Biomass & waste | Others* | Total |
|---|---|---|---|---|---|---|---|
| **Total** | 41713.3 | 18792.9 | 1453.3 | 183.1 | 255.2 | 82.0 | 62479.8 |

1 Only plants that have reported to the EUB are included.

* "Others" includes oil, diesel, geothermal, and solar.

## Table 4. INTERCHANGE (GWh), 2001

| Interconnections | Exports | Imports | Net Interchange |
|---|---|---|---|
| British Columbia | 2228.8 | 287.0 | -1941.8 |
| Saskatchewan | 63.8 | 680.0 | 616.2 |
| Montana | 0.0 | 2.8 | 2.8 |
| **Total** | 2292.6 | 969.8 | -1322.8 |

## Table 5. ALBERTA ELECTRIC ENERGY NET INSTALLED CAPACITY (MCR MW) BY RESOURCE, 1992-2001

| Year / Resource Type | Coal | Natural Gas | Hydro | Wind | Biomass & Waste | Others* | Total |
|---|---|---|---|---|---|---|---|
| 1992 | 5299.0 | 1931.7 | 819.7 | 0.6 | - | 8.4 | 8059.4 |
| 1993 | 5318.0 | 1924.6 | 819.7 | 11.5 | - | 14.6 | 8088.4 |
| 1994 | 5704.0 | 1978.3 | 848.7 | 21.4 | 20.7 | 14.6 | 8587.7 |
| 1995 | 5704.0 | 1982.9 | 848.7 | 21.4 | 20.4 | 12.6 | 8590.0 |
| 1996 | 5704.0 | 1985.4 | 848.7 | 21.4 | 35.4 | 12.6 | 8607.5 |
| 1997 | 5704.0 | 1995.9 | 848.7 | 21.4 | 31.4 | 12.6 | 8614.0 |
| 1998 | 5621.0 | 2053.9 | 848.7 | 21.3 | 35.4 | 11.8 | 8592.1 |
| 1999 | 5621.0 | 2315.3 | 851.8 | 21.3 | 51.0 | 12.6 | 8873.0 |
| 2000 | 5621.0 | 3071.9 | 864.5 | 78.6 | 30.5 | 25.4 | 9691.9 |
| 2001 | 5615.0 | 4015.9 | 864.6 | 99.6 | 30.5 | 24.5 | 10650.1 |

* "Others" includes oil, diesel, geothermal, and solar.

**Table 6. ALBERTA ELECTRIC ENERGY GENERATION (GWh) BY RESOURCE AND INTERCHANGE, 1992-2001**

| Year | Coal | Natural Gas | Hydro | Wind | Biomass & Waste | Others* | Total | Net Interchange | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | In | Out | |
| 1992 | 38,546.7 | 7,492.4 | 1,583.1 | 0.5 | - | 16.4 | 47,639.1 | - | 1,642.7 | 45,996.4 |
| 1993 | 39,187.2 | 7,771.6 | 1,799.4 | 1.8 | - | 16.5 | 48,776.5 | - | 1,599.7 | 47,176.8 |
| 1994 | 42,269.8 | 8,047.4 | 1,771.3 | 35.6 | 16.3 | 16.1 | 52,156.5 | - | 2,108.6 | 50,047.9 |
| 1995 | 42,460.8 | 7,219.8 | 2,006.5 | 54.3 | 129.3 | 14.3 | 51,885.0 | - | 958.9 | 50,926.1 |
| 1996 | 41,220.3 | 8,228.3 | 1,973.4 | 59.1 | 229.8 | 13.0 | 51,723.9 | 1,883.8 | - | 53,607.7 |
| 1997 | 43,054.3 | 8,724.6 | 1,830.5 | 62.0 | 232.2 | 26.7 | 53,930.3 | 1,039.5 | - | 54,969.8 |
| 1998 | 41,267.7 | 11,467.7 | 2,044.6 | 49.4 | 279.1 | 32.1 | 55,140.6 | 768.2 | - | 55,908.8 |
| 1999 | 40,276.7 | 12,126.2 | 2,188.2 | 64.6 | 335.5 | 19.7 | 55,010.9 | 999.7 | - | 56,010.6 |
| 2000 | 40,459.2 | 15,219.9 | 1,756.3 | 71.8 | 273.8 | 57.0 | 57,838.0 | 360.3 | - | 58,198.3 |
| 2001 | 41,713.3 | 18,792.9 | 1,453.3 | 183.1 | 255.2 | 82.0 | 62,479.8 | - | 1322.8 | 61,157.0 |

* "Others" includes oil, diesel, geothermal, and solar.

**Table 7. SYSTEM LOAD OF DISTRIBUTION UTILITY OPERATORS AT PEAK LOAD HOUR: 18:00, 10 December 2001**

| Distribution Utility Operators | Load (MW) |
|---|---|
| ATCO ELECTRIC | 1381.8 |
| ENMAX | 1313.0 |
| EPCOR | 1033.1 |
| UTILICORP | 3208.5 |
| CITY OF LETHBRIDGE | 99.2 |
| CITY OF MEDICINE HAT | 108.7 |
| CITY OF RED DEER | 101.7 |
| POWER POOL reported a peak demand of 7934 MW* | |

* Excludes Medicine Hat and exports; includes transmission losses.

**Table 8. DETAILS OF NONCOINCIDENT PEAK LOAD BY DISTRIBUTION UTILITY OPERATORS FOR ALBERTA ELECTRIC SYSTEM, 2001**

| Distribution Utility Operators | Peak Load (MW) | Time of Occurrence |
|---|---|---|
| ATCO ELECTRIC | 1380.0 | 18:00 Dec 03/01 |
| ENMAX | 1323.0 | 17:45 Dec 11/01 |
| EPCOR | 1035.4 | 18:00 Dec 11/01 |
| UTILICORP | 3283.6 | 18:00 Dec 21/01 |
| CITY OF LETHBRIDGE | 114.8 | 16:30 Aug 16/01 |
| CITY OF MEDICINE HAT | 148.7 | 17:00 July 04/01 |
| CITY OF RED DEER | 102.0 | 17:45 Dec 10/01 |

## Table 9. TOTAL CIRCUIT KILOMETRES OF TRANSMISSION AND DISTRIBUTION LINES BY MAJOR ELECTRIC UTILITY, 2001

| Utility Operators | Transmission Lines (over 60 kV) | Distribution Lines (60 kV and below) | Total Lines |
|---|---|---|---|
| ATCO ELECTRIC | 8,325 | 53,990 | 62,315 |
| ENMAX | 279 | 6,054 | 6,333 |
| EPCOR | 188 | 4,248 | 4,436 |
| TRANSALTA | 11,421 | 0 | 11,421 |
| UTILICORP | 0 | 101,793 | 101,793 |
| City of Lethbridge | 35 | 410 | 445 |
| City of Medicine Hat | 54 | 614 | 668 |
| City of Red Deer | 0 | 648 | 648 |
| Other Towns | 0 | 363 | 363 |
| **Total** | 20,302 | 168,120 | 188,422 |

## Table 10. CIRCUIT KILOMETRES OF TRANSMISSION AND DISTRIBUTION LINES, 1992-2001

| Year | Transmission Lines (over 60 kV) | Distribution Lines (60 kV and below) | Total Lines |
|---|---|---|---|
| **1992** | 20,451 | 210,487 | 230,938 |
| **1993** | 20,779 | 188,230 | 209,009 |
| **1994** | 18,920 | 185,987 | 204,907 |
| **1995** | 19,979 | 211,260 | 231,239 |
| **1996** | 20,625 | 230,005 | 250,630 |
| **1997** | 20,637 | 199,634 | 220,271 |
| **1998** | 20,327 | 194,992 | 215,319 |
| **1999** | 20,456 | 168,964 | 189,420 |
| **2000** | 20,425 | 162,326 | 182,751 |
| **2001** | 20,302 | 168,120 | 188,422 |

## Table 11. ELECTRIC ENERGY DISTRIBUTION SALES AND NUMBER OF CUSTOMERS, 2001

| Utility | Residential | | Farm[1] | | Commercial[2] | | Industrial[3] | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (GWh) | (No.) | (GWh) | (No.) | (GWh) | (No.) | (GWh) | (No.) | (GWh) | (No.) |
| ATCO ELECTRIC | 752.7 | 108,011 | 446.4 | 29,177 | 1,497.7 | 22,673 | 6,998.6 | 9,456 | 9,695.4 | 169,317 |
| ENMAX | 2,153.0 | 317,357 | - | - | 4,714.4 | 31,196 | 683.7 | 2,001 | 7,551.1 | 350,554 |
| EPCOR | 1,493.6 | 248,957 | - | - | 974.5 | 30,039 | 3,939.2 | 2,374 | 6,407.3 | 281,370 |
| UTILICORP | 1,956.5 | 260,522 | 1,320.2 | 54,239 | 2,683.1 | 42,028 | 16,752.3 | 21,198 | 22,712.1 | 377,987 |
| City of Lethbridge | 168.0 | 26,541 | - | - | 220.2 | 2,754.0 | 214.1 | 36 | 602.3 | 29,331 |
| City of Medicine Hat | 175.8 | 21,864 | 3.4 | 120 | 249.7 | 2,717 | 297.1 | 21 | 726.0 | 24,722 |
| City of Red Deer | 174.8 | 25,332 | 0.0 | 0.0 | 97.4 | 2,852 | 252.6 | 216 | 524.8 | 28,400 |
| Other Towns & Villages[4] | 29.0 | 6,386 | 0.0 | 0 | 41.1 | 1,133 | 0.8 | 13 | 70.9 | 7,532 |
| Isolated Plants | 29.7 | n/a | 2.1 | n/a | 31.7 | n/a | 95.8 | n/a | 159.3 | 0 |
| **Total** | 6,933.1 | 1,014,970 | 1,772.1 | 83,536 | 10,509.8 | 135,392 | 29,234.2 | 35,315 | 48,449.2 | 1,269,213 |

Note: These data do not include electricity generated on site and used on site.

1 Includes 30,846 Rural Electric Association (REA) customers.

2 Includes street lighting.

3 Includes transportation.

4 Includes Cardston, Fort Macleod, Municipality of Crowsnest Pass, Ponoka.

## Table 12. ELECTRIC ENERGY DISTRIBUTION SALES AND NUMBER OF CUSTOMERS, 1992-2001

| | Residential | | Farm[1] | | Commercial[2] | | Industrial[3] | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | (GWh) | (No.) | (GWh) | (No.) | (GWh) | (No.) | (GWh) | (No.) | (GWh) | (No.) |
| 1992 | 6,008.3 | 862,066 | 1,596.4 | 94,829 | 10,931.7 | 93,616 | 20,076.3 | 55,018 | 38,612.7 | 1,105,529 |
| 1993 | 6,204.9 | 854,843 | 1,562.7 | 97,770 | 11,097.0 | 129,817 | 20,860.2 | 17,649 | 39,724.8 | 1,100,079 |
| 1994 | 6,284.8 | 872,722 | 1,666.1 | 93,876 | 11,483.0 | 123,974 | 22,530.6 | 29,751 | 41,964.5 | 1,120,323 |
| 1995 | 6,285.6 | 891,148 | 1,632.6 | 94,743 | 11,497.1 | 129,116 | 23,650.2 | 32,997 | 43,065.5 | 1,148,004 |
| 1996 | 6,562.2 | 922,203 | 1,794.5 | 95,403 | 11,903.7 | 136,059 | 24,988.5 | 31,531 | 45,248.9 | 1,185,196 |
| 1997 | 6,520.8 | 905,124 | 1,799.1 | 88,915 | 12,290.5 | 141,445 | 25,918.0 | 32,226 | 46,528.4 | 1,167,710 |
| 1998 | 6,554.8 | 937,510 | 1,709.0 | 77,905 | 12,881.7 | 150,244 | 26,497.5 | 33,673 | 47,643.0 | 1,199,332 |
| 1999 | 6,786.2 | 969,733 | 1,734.3 | 90,075 | 12,980.6 | 142,615 | 26,500.4 | 33,487 | 48,001.5 | 1,235,910 |
| 2000 | 7,134.4 | 1,002,007 | 1,811.3 | 71,721 | 12,800.6 | 138,419 | 27,847.6 | 33,101 | 49,593.9 | 1,245,248 |
| 2001 | 6,933.1 | 1,014,970 | 1,772.1 | 83,536 | 10,509.8 | 135,392 | 29,234.2 | 35,315 | 48,449.2 | 1,269,213 |

Note: These data do not include electricity generated on site and used on site.

1 Includes Rural Electric Association (REA) customers.

2 Includes street lighting.

3 Includes transportation.